

## **Abstract**

A method for the photocatalytic conversion of an oxygenated hydrocarbon such as methanol includes the step of forming a colloidal suspension of a metal oxide catalyst in an oxygenated hydrocarbon. The method also includes the step of irradiating the colloidal suspension with pulsed laser irradiation in the range of about 180nm to 520nm wavelength at about 150mJ per pulse at a temperature at about 16°C to 60°C for a period of about 30 minutes or more.